

- 1 -

**NETWORK-BASED FINANCIAL PLANNING SYSTEM AND METHOD****CROSS-REFERENCE TO RELATED APPLICATION**

5 This application is related to and claims priority to U.S. Provisional Patent Application No. 60/157,142 entitled ON-LINE FINANCIAL PLANNER, filed September 30, 1999, the contents of which are incorporated herein by reference.

**BACKGROUND OF THE INVENTION****Field of the Invention**

10 The present invention relates to a financial planning system and method which optimizes credit opportunities for a user, and in particular, to a network-based method and system which allows a user to input their credit profile and financing objectives and  
15 provides a detailed group of financing options and information to the user including the ability to apply for financing on-line.

**Related Art**

20 The proliferation of global computing via global communication networks such as the Internet has facilitated many aspects of electronic financing

applications. Among these applications are those which provide a user with the ability to review their current financial situation in light of other available financing opportunities.

5           For example, many banks and other lending institutions provide access to on-line financial calculators which provide a user with an estimated loan payment amount given a set of input criteria such as principal amount, repayment term and interest rate.  
10       Typically, these loan calculators are integrated as part of Internet webpages provided by the financial institution. Loan calculators, however, do not take into account a user's financing objectives, do not offer a comparison of the user's current situation with financing  
15       products designed to meet the user's objectives and do not offer a comprehensive view of the user's credit situation.

          Other financial institutions offer product routers on their website which direct a user to a particular  
20       product based on a simple set of input criteria. For example, a user who indicates an interest in obtaining a credit card might be routed to a series of credit card related webpages which advertise the financial institution's credit card offerings.

25           Some websites are more sophisticated, routing a user to a product based on the user's specific credit request. For example, a user might input that she seeks an automotive finance loan for a 60 month term for a loan amount of \$20,000 toward a vehicle whose purchase price

is \$25,000. The routing algorithm in the financial institution's web server directs the user to a product which meets the user's stated requirements. However, routing websites do not take into account the user's current credit situation along with the user's stated credit objectives to determine a particular set of products which meet all the user's requirements. Further, these websites do not provide comprehensive debt consolidation options which meet the user's objectives while simultaneously allowing the user to reduce the quantity of institutions and accounts providing financing.

Still other financial institutions provide websites which accept input criteria relating to the user's income and current expenses in order to calculate the extent to which the user can borrow additional funds. The user may be offered the opportunity to contact the financial institution to learn more about the financial institution's product offerings.

These systems, however, do not provide a user with a comprehensive view of their current credit situation by comparison with those products which are offered by the financial institution which will save the user money or lower the user's monthly payments. These systems also do not base product recommendation on a user's credit history or establish a recommendation based on meeting the user's objectives over a predetermined period of time. In addition, these systems do not allow the user to apply for credit or loans on-line within the same

browsing session. Further, these systems do not allow the user to obtain detailed debt consolidation options which will save the user money as compared with the user's current credit profile.

5 In sum, it is desirable to have a system and method which allows a user to use a standard web browser to input their credit profile and credit objectives, view a comprehensive summary of their credit picture and receive a display generated using a set of business rules which  
10 matches the user's credit situation and objectives against current product offerings. The result provides a detailed comparison of the user's current loans and credit accounts with those offered by the service provider so that the user can easily compare the  
15 offerings. In addition, there is no system which allows a user to obtain additional information in the form of debt consolidation in which their current credit situation is compared against a consolidation package offered by the service provider based on the user's  
20 input. Finally, there is no financial planning system which offers the above-described desirable elements and which also allows a user to apply for credit and loans on-line during the same browsing session.

#### SUMMARY OF THE INVENTION

25 The present invention advantageously provides a comprehensive system by which a user inputs data relating to their current credit situation and also indicates a financing objective. The system advantageously accepts

006250"092900  
this data and, using a set of business decision rules,  
considers the user's credit data in conjunction with  
products offered by the service provider, thereby  
providing the user with a credit financing opportunity  
5 list presented in the form of a multi-level view. Te  
multi-level view compares their current credit profile  
with products offered by the service provider which will  
meet the user's objective, i.e., save the user money by  
lowering their interest rate or lowering monthly  
10 payments, etc.

The multi-level display preferably includes a  
summary view of the available options, and allows the  
user to obtain detailed information, in the form of  
graphs, charts, and the like, so that the user can  
15 determine which proposed option, if any, is beneficial to  
them. Further, the present invention allows the user to  
apply on-line for those products for which the user is  
interested.

As an aspect of the present invention, a method for  
20 allowing a user of a user terminal to receive credit  
financing opportunities is provided in which credit data  
is received from the user terminal. The credit data  
includes a user objective and a credit profile. Credit  
financing opportunities are determined based on the  
25 credit data and at least one predetermined decision rule.  
An output is generated in which the output includes a  
comparison of at least part of the credit profile with  
the determined credit financing opportunities. The  
output is provided to the user terminal.

As still another aspect, the present invention provides a computer readable storage medium storing computer executable instructions which, when executed, perform a method for allowing a user of a user terminal to receive credit financing opportunities, in which credit data is received from the user terminal. The credit data includes a user objective and a credit profile. Credit financing opportunities are determined based on the credit data and at least one predetermined decision rule. An output is generated in which the output includes a comparison of at least part of the credit profile with the determined credit financing opportunities. The output is provided to the user terminal.

As still yet another aspect, the present invention provides an information processor in a financial processing system, in which the information processor is coupled to at least one user terminal via a communication network, the information processor has a memory storing at least one decision rule. A network interface couples the information processor to the communication network. A central processing unit performs the functions of:

receiving, via the network interface, credit data from the user terminal, the credit data including a user objective and a credit profile;

determining credit financing opportunities, the determination being based on the credit data and at least one predetermined decision rule;

generating an output, the output including a

comparison of at least part of the credit profile with the determined credit financing opportunities; and providing the output to the user terminal.

The present invention also includes an aspect in which a method for allowing a user of a user terminal to apply for a credit financing opportunity via a communication network is provided in which a user objective is received from the user terminal in which the user objective indicates that the user wishes to obtain credit. A list of potential financing products is provided to the user terminal. A request is received from the user terminal for information corresponding to a selected one of the potential financing products. The information is provided to the user terminal. A request is received from the user terminal to initiate an application for the selected financing product.

Other features and advantages of the present invention will become apparent from the following description of the invention which refers to the accompanying drawings.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a diagram of the hardware elements of a financial planning system constructed in accordance with the principles of the present invention;

Fig. 2 is a block diagram of the functional elements of a user terminal, an information processor and a product processor constructed in accordance with the principles of the present invention;

Fig. 3 is a flow chart of the general operative process of the present invention;

Fig. 4 is an example of an objective entry display screen displayed on a user terminal;

5 Fig. 5 is an example of a credit option display screen presented on a user terminal.

Fig. 6 is an example of a credit input display screen presented on a user terminal;

10 Fig. 7, comprised of Figs. 7a and 7b, is an example of a summary display presented on a user terminal;

Fig. 8 is a flow chart of the multi-level output operation of the present invention;

15 Fig. 9, comprised of Figs. 9a and 9b, is an example of a level one output display screen presented on a user terminal;

Fig. 10 is an example of a detailed product display presented on a user terminal;

20 Fig. 11 is an example of a detailed display screen relating to a home equity line of credit presented on user a terminal;

Fig. 12 is an example of a level two output display screen presented on a user terminal;

Fig. 13 is an example of a detailed consolidation option display screen presented on a user terminal;

25 Fig. 14 is a block diagram of an input and output flow of the present invention from the perspective of an information processor in the case where a user's financing objective is to reduce payments or reduce interest;



Fig. 15 is a block diagram of an input and output flow of the present invention from the perspective of an information processor in the case where a user's financing objective is obtaining credit; and

5 Fig. 16 is a diagram showing a process flow of the present invention from the perspective of an information processor.

10 Fig. 17 is a flow chart of an alternate embodiment according to the general operative process of the present invention.

#### DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

Referring now to the drawing figures in which like reference numbers refer to like elements, there is shown in Fig. 1 a financial planning system constructed in accordance with the principles of the present invention and designated generally as "10". Financial planning system 10 is preferably comprised of one or more information processors 12 communicating with one or more user terminals 14 via a communication network 16.

15

20 Communication network 16 can be any communication network, whether private or public, but is preferably the Internet. Financial planning system 10 optionally includes one or more product processors 18 coupled to information processors 12 via internal communication network 20.

25

Product processors 18 support one or more financial services products, such as credit cards, secured loans, unsecured loans, lines of credit, mortgages and the like.

Product processors 18 provide support for users' accounts and preferably include a database to maintain all relevant account data. Product processors 18 provide data to information processors 12 relating to those  
5 financing opportunities, i.e. products supported by the respective product processor. Information processors 12 use this data when preparing a list of potential financing opportunities to be considered. Information processors 12, by being connected to communication  
10 network 16, preferably has access to other information sources 15 which can be considered when preparing the above list of potential financing opportunities presented to the user. The inclusion of outside information sources helps to maintain trust among the users by non-  
15 biasing the products offered. Other information sources may be required to pay a fee to be included in the selection process. Of course, the functions implemented by product processors 18 can be implemented on information processors 12, thereby obviating the need for  
20 product processors 18 and internal communication network 20.

Internal communication network 20 can be any communication network capable of transporting data between information processors 12 and product processors  
25 18. Internal communication network 20 is preferably secured from communication network 16 such that user terminals 14 can not directly access product processors 18.

Referring to Fig. 2, the functional elements of information processors 12, user terminals 14 and product processors 18 preferably include a central processing unit (CPU) 22 used to execute software code in order to control the operation of the processor, read-only memory (ROM) 24, random access memory (RAM) 26, at least one network interface 28 to transmit and receive data to and from other computing devices across communication networks 16 and 20. Information processors 12, user terminals 14 and product processors 18 also include one or more storage devices 30 such as a hard disk drive, floppy disk drive, tape drive or CD-ROM for storing program code, database and application data, a display 32, and one or more input devices 34. Input devices 34 include mice, keyboards, track balls, pens and other devices suitable for entering data into a computer or selecting portions of the screen on display 32.

The various components of information processors 12, user terminals 14 or product processors 18 need not be physically contained within the same chassis or even be located in the single location. For example, storage devices 30 may be located at a site which is remote from the remaining elements of the processor or terminal, and may even be connected to CPU 22 across communication network 16 or 20 via network interface 28.

Each information processor 12 receives, processes, distributes and transmits data to and from user terminals 14 and product processors 18. Information processors 12 preferably include software which allows information

processors 12 to function as web servers, responding to queries and providing HTML, Java, Active-X control programs and the like to user terminals 14 via communication network 16.

5           It is contemplated that the capacities of the various functional elements of information processors 12, user terminals 14 and product processors 18 are sized according to expected demand. Information processors 12 also preferably function as application servers,  
10       executing the functions necessary to process data received from user terminals 14 and product processors 18, thereby providing the desired output for display on user terminal 14.

15           User terminals 14 can be any device capable of communicating with information processors 12 across communication network 16, including a desktop or laptop personal computer, personal digital assist (PDA) or other hand-held computing device, Web-TV, and the like. A  
20       significant aspect of the preferred embodiment of system 10 is that it does not require that user terminals 14 be capable of any functions other than communicating with information processors 12 using communication software such as a standard Internet web browser. Instead, all  
25       software and data specific to the operation of system 10 are stored in information processors 12, or gathered by information processors 12, themselves.

As used herein, references to displaying data on user terminal 14 refer to the process of communicating data to user terminal 14 across communication network 16,

and processing the data such that the data can be viewed on display 32 corresponding to user terminal 14 using an Internet web browser or the like.

5 In this preferred embodiment, certain applets such as Java applets, Active-X control programs and the like are stored on information processor 12 and sent to user terminals 14 for execution by the web browser software. In this manner, components of system 10 which require execution on user terminal 14 are stored on information processor 12. The web browser interface on user terminals 14 can, therefore, be customized by a Java applet, Active-X control program and the like sent from information processor 12 to user terminal 14. This allows upgrades and enhancements to system software components to be easily distributed and obviates the need to have a technician travel to location of user terminal 14 for software upgrades.

10 The nature of the invention is such that one skilled in the art of writing computer executable code (software) will be able to implement the desired functions using one or a combination of popular programming languages, for example C++, Java, Hypertext Mark-Up Language (HTML) and other known database manipulation languages.

15 The overall operation of system 10 is explained with reference to the flow chart shown in Fig. 3. Upon establishing communication with an information processor 12, the user is prompted to input user data (step S100). Input can take the form of radio buttons, selections from pull-down menus or alpha- numeric entries into forms,

such as HTML forms, provided on the display of user terminal 14. Data input can be at least partially performed automatically by querying a data bank or other suitable interface which can provide at least some of the required input (i.e. credit information from credit reporting agencies or information from a past visit to the site). If the data is entered by referring to an outside source, it is preferably that the user be given the opportunity to check the input for accuracy and to make the appropriate corrections. User data includes identification of the user's primary financing objective as well as a complete credit profile. The user's credit profile preferably includes one or more of credit card data, vehicle (automobile) loan data, secured and unsecured debt data, home equity data, and residential mortgage data.

Fig. 4 shows an example of objective entry display screen 22, displayed on user terminal 14 as the user initiates interaction with financial planning system 10. Objective entry display screen 22 includes objective indicator area 24 from which the user enters a borrowing goal. For example, objective indicator area 24 includes lowering interest rate goal 24a, lowering monthly payment goal 24b and obtaining credit goal 24c. In the example shown in objective entry display screen 22, the user indicates a preference by selecting an appropriate radio button. Of course, any financial goal can be listed and it is contemplated that the invention is not limited to the three objectives shown in Fig. 4.

Upon indicating an objective, the user selects continue button 26 which causes input objective data corresponding to the selected objective to be sent to information processor 12.

5 In the case where the user is interested in obtaining credit, for example by selecting obtain credit goal 24c in Fig. 4, the user is presented with obtain credit display screen 28 as shown in Fig. 5. Obtain credit display screen 28 provides a user with credit  
10 option list 30. Credit option list 30 is preferably a list of links, from which a credit option can be selected to learn more about that particular option. Examples of credit options for which a user can obtain additional information include purchasing car, financing an  
15 education, making home improvements, purchasing a home, covering medical expenses, buying a second home, financing a wedding or other large event, vacation or any other credit need.

20 Selecting an item from credit option list 30 causes a display screen or series of display screens to be presented on user terminal 14 (not shown) which provide detailed information about the selected item.

25 In the case where the user wishes to lower interest rates or monthly payments by selecting goals 24a or 24b the user is prompted to enter additional user data such as those described above relating to credit cards, home equity lines of credit, etc.

Fig. 6 shows an example credit input display screen 32 by which the user enters user credit data. Although

the example shown in Fig. 6 is for credit card data, it should be understood that similar display screens are used for other types of credit information, such as lines of credit, outstanding mortgages, automobile loans, etc.

5           Credit input display screen 32 preferably includes provider name entry area 34 and corresponding interest rate entry area 36, outstanding balance entry area 38, minimum monthly payment entry area 40, available line of credit entry area 42 and service provider card indicator 44. For each provider, the user enters the corresponding interest rate in interest rate entry area 36, the outstanding balance of the credit card in outstanding balance entry area 38, the minimum required monthly payment for that card in minimum monthly payment entry area 40 along with the total available line of credit for the corresponding card in available line entry area 42. In addition, the user preferably indicates whether the credit card is issued by the provider of system 10 by making an indication in service provider card indicator 44.

10

15

20

The user continues to enter credit data for their credit cards until all data has been entered.

The user can indicate that they have additional credit cards to enter by making an indication in additional entry area 46. When all data pertaining to the credit cards has been entered, the user selects continue button 48. The user can reset credit input display screen 32 by selecting reset button 50. Of course, if the user has no credit cards they can merely

25



select the continue button. The data entered into areas 34 - 44 for each of the different types of credit along with the user's credit objective as indicated in objective indicator area 24 comprises the user input data.

Referring again to Fig. 3, upon completion of entry of all user input data for each type of credit, information processor 12 generates and provides a credit summary to the user via user terminal 14 (step S102).

The credit summary is created based on the user input data and is presented to the user in an easy to read report which quickly enables the user to see a snapshot of their current credit profile.

In an alternate embodiment, user data input (step 100) is entered automatically by querying an appropriate data source (i.e. credit report, another application or a prior visit, etc.). The entered information is displayed on user terminal 14 providing the user with an opportunity to inspect the information for accuracy and to make any necessary corrections. The user also has the opportunity to manually add any new or missing information in the same manner as outlined above.

Fig. 7, comprised of Figs. 7a and 7b, shows an example of a summary display generated by information processor 12 and displayed on user terminal 14. Credit summary display screen 52 preferably includes a summary of each of the various types of credit for which the user entered input data. In the case where credit summary display screen 52 is too large to be displayed in its

As shown in Fig. 7, summary areas preferably include credit card summary area 54, personal lines of credit summary area 56, personal loans summary area 58, home equity lines of credit summary area 60, auto loans summary area 62, and total outstanding credit summary area 68. Of course, those credit areas for which no input data was entered are not displayed. Total outstanding credit area 68 represents a compilation of the user's total credit, preferably not including mortgage data.

25           Selecting submit button 70 indicates to information processor 12 that the user is satisfied with their input data and wishes to continue. Upon receiving this indication, information processor 12 processes the input data using a comprehensive set of decision rules (step

S104) to determine a recommended set of one or more products which will meet the user's objective as indicated in objective indicator area 24.

5 The business decision rules implemented according to the present invention carefully consider the user's objective in light of their credit situation. For example, a user who is currently paying a 9.9% interest rate on a credit card will not be offered a credit card with an interest rate of 15% in the case where the user's  
10 objective is to lower interest rates. However, this option may be offered if it will result in a lower monthly payment if that is the user's objective.

Alternatively, it is contemplated that the processing step (step S104) can include obtaining the  
15 user's credit history i.e., credit worthiness report, either from within the records contained by the provider of system 10 or by electronically requesting the credit history from a third party vendor if not automatically entered in step 100 as discussed above. The credit  
20 history is then considered along with the user provided credit data and objectives when determining which products to offer. For example, a user with an excellent credit history will be offered better rates for competing products than a user whose credit history is not as good.

25 It is contemplated that there will be situations where a product offered by the provider of system 10 is not as good as the user's current product, i.e., the product will not meet the user's credit goal. In these cases, those products will not be offered to the user

since nothing should be done to damage the user's confidence in the system.

0967564-692900  
5 An example of a typical decision rule implemented by information processor 12 is explained. Suppose that a user has an outstanding unsecured balance other than on her credit cards and that her goal is to lower her interest rate, i.e., save money. Information processor 12 will check to make sure that the sum of the  
10 outstanding credit card balances does not exceed the maximum available line of credit for a credit card offered by the provider of system 10. Information processor 12 will then check to determine whether the average monthly interest rate on the service provider's credit card with the transferred unsecured balances is  
15 less than the average monthly interest rate payment being currently paid by the user.

20 Preferably, information processor 12 also checks to determine that the user will save a predetermined amount of money over a predetermined period, for example at least \$50.00 over nine months. If the user will save the predetermined amount over the predetermined time period, that option is considered viable and will be offered to the user. It should be noted that, in the case where the user has provided enough profile information to enable a  
25 determination as to the user's credit worthiness, for example via a credit check, the credit card offered by the service provider for which the user is qualified can be selected based on the user's credit worthiness. Of course, any additional factors may be considered during

the rules processing step.

A set of rules tailored to the service provider's lending criteria are applied to each of the user's different types of credit for comparison with the types of credit offered by the provider of system 10.

Although the decision rules are based on the service provider's lending criteria, the decision rules are also derived to take the user's financing objective into account. For example, no solution will be presented to the user which does not accomplish the user's stated financing objective.

Examples of service provider lending criteria include but are not limited to, whether the product is offered in the user's stated geographic area, whether the product satisfies the user's preference for either security of fixed monthly payments and interest rates for loans or more flexible borrowing such as lines of credit and whether the product satisfies the requested borrowing amount. In the case of the latter, whether the requested borrowing amount exceeds allowable minimums and maximums.

For many products, including home equity products, the determination of whether the requested borrowing amount exceeds allowable minimums and maximums involves calculating the available equity in the user's home and comparing it to the user's requested borrowing need. For these products, the decision rules are preferably arranged to provide spillover options in the case where the user does not have enough equity to meet the user's

requested borrowing needs. For example, an unsecured loan option might be presented to the user in combination with a home equity loan. Regardless, spillover options will not be presented to the user if the options do not meet the user's stated financing objective.

Also, where there is more than one product within one product set that satisfies the user's objective and meets set criteria with home equity lines of credit, the rules preferably default to the more favorable product for the user, i.e. the product with the greatest monthly savings or lowest interest rate, depending on the user's stated financing objective.

It should be noted that, if the aggregate requested financing amount cannot be met, the decision rules are arranged such that products are reviewed in reduced sets, thereby allowing the user to potentially achieve as much of the stated objective as possible.

In addition, it is also contemplated that taxation implications can be considered in the case where the user's credit profile includes a home equity line of credit, home equity loan, first mortgage, or other indication that the user has real estate against which they can borrow. Preferably, the potential tax savings simply defaults to a common tax bracket displaying the tax consequences of the option based on a "typical" taxpayer. The user then has the option to enter her specific tax bracket to customize the results and display the actual tax savings based on the inputted data.

Upon completion of decision rules processing (step S104), information processor 12 provides a multi-level output to the user (step S106), preferably in the form of HTML and/or Java or Active-X control program data. The multi-level output provides the user with a product-by-product comparison of those products provided by the provider of system 10 which will meet the user's stated objectives based on their user input data. The multi-level output is explained in greater detail below.

The multi-level output provides the user with the ability to select a particular product in the case where the user wishes to make an application for that product (step S108). For example, the user may be interested in applying for a personal line of credit which will save them money (or lower their monthly payments) as compared with their current personal line of credit. In that case, the user indicates that they wish to make an on-line personal line of credit application, preferably by selecting an appropriate link from the output display. In that case, information processor 12, in conjunction with product processor 18 if necessary, prompts the user to enter appropriate application data, and processes the application in accordance therewith to provide the user with an indication as to whether they qualify for the requested product (step S110). Systems for accepting on-line loan applications are known.

The present invention, therefore, provides a user with the ability to quickly enter their credit data and objectives by which a summary of their credit profile is

provided to them along with a multi-level display of products which meet the user's stated objectives given their current credit situation. Further, the present invention conveniently and advantageously allows the user to select one or more of the offered products in order to apply for that product electronically. As such, the present invention advantageously eliminates the need for the user to visit or telephone the financial institution in order to determine which products meet the user's needs.

The multi-level output operation of step S106 is described in detail with reference to the flow chart of Fig. 8. Upon completion of processing as set forth in step S104, the present invention displays a comparison of the user's current financing products with those offered by the service provider which meet the user's stated objectives (step S112). This product-by-product comparison within the context of the user's objective, is referred to as the level one display.

The level one display is preferably a textual or textual/graphical, i.e., pictorial output which allows the user to quickly determine which, if any, of the service provider's products are compelling and warrant more detailed investigation on the part of the user. An example of a level one output display screen is shown in Fig. 9, comprised of Figs. 9a and 9b. As is shown in Fig. 9, level one output display screen 72 is comprised of comparison areas 74a, 74b, 74c and 74d. Each of output comparison areas 74a-74d compares a type of credit



5

10

15

20

25

00450672.2

Fig. 10 shows an example of a detailed product display, displayed on user terminal 14 when the user selects details link 80. As shown in Fig. 10, credit line detail display screen 82 includes graph 84 which provides a pictorial view of the comparison between the user's current payments and the payments which will result if the user signs up for the service provider's credit line product. In addition, credit line detail display screen 82 preferably includes application link 78.

Fig. 11 shows another example of a detailed display screen relating to a home equity line of credit, presented on the display of user terminal 14 when the user selects a corresponding details link from level one output display screen 72. As shown in Fig. 11, home equity detail display screen 86 includes a graph showing a pictorial view of the user's potential savings and home equity application link 88.

Home equity detail display screen 86 also preferably includes tax implication area 90. By the user providing a tax rate in tax rate area 92, information processor 12 determines the potential yearly tax savings which will result from the user's enrollment in the proposed home equity line of credit, home equity loan or mortgage product. Areas similar to tax implication area 90 are preferably provided on those product detail display screens for products in which tax savings can result.

For example, home equity lines of credit, home equity loans and other real property mortgages.

Although Figs. 10 and 11 show a graph as the pictorial means of comparison, it is contemplated that any pictorial representation can be used, for example, pie charts and the like.

Referring again to Fig. 8, in the case where the user does not wish to receive product details in step S114, the user can select an appropriate link on level one output display screen 72 to receive a level two output. Requesting a level two display causes information processor 12 to generate and display debt consolidation options on user terminal 14 (step S118). However, the system is preferably arranged such that the level two display is made available only if balance consolidation will further enable the user to meet their financing objective, for example, provide additional savings when compared with the individual product comparisons shown in the level one display.

Fig. 12 shows an example of a level two output display screen. Level two output display screen 94 advantageously provides the user with a comprehensive set of financing options which will allow the user to consolidate current debt while simultaneously meeting the user's financing objectives.

For example, level two output display screen 94 as shown in Fig. 12 comprises consolidation areas 96a and 96b. The consolidation option shown in consolidation area 96a will potentially save the user \$26.00 by

consolidating the user's outstanding personal credit balances to a personal loan offered by the provider of system 10. As another example, the option illustrated in consolidation area 96b will allow the user to potentially  
5 save \$254.00 over a nine month introductory period by refinancing the user's outstanding personal credit balances to a credit card offered by the provider of system 10.

Consolidation areas 96a and 96b preferably provide  
10 information regarding outstanding balances, current interest rates, proposed interest rates and potential savings arranged in a manner similar to those provided in level one output display screen 72. In addition, similar to level one output display screen 72, level two output  
15 display screen 94 provides the user with the ability to read important notices, apply for the offered product on-line, or obtain additional details for the proposed option.

Referring again to Fig. 8, if the user wishes to  
20 view additional details about a particular consolidation option (step S120) the user can select a link or otherwise indicate such. Product details for the selected consolidation option are then displayed in a manner similar to that for a level one display product  
25 (step S116).

An example of a consolidation option detail display screen is shown in Fig. 13. Consolidation option detail display screen 98 preferably shows a pictorial view of the user's current credit allocation and proposed credit

allocation based on the service provider's proposed consolidation option. For example, consolidation option display screen 98 as shown in Fig. 13 includes current credit allocation pie chart 100 and proposed credit allocation pie chart 102. Current credit allocation pie chart 100 provides a breakdown of the user's current credit allocation, including the user's average annual percentage interest rate. Proposed credit allocation pie chart 102 shows the user's credit allocation and corresponding average annual percentage interest rates if the user accepts the service provider's proposal. Consolidated option detail display screen 98 also preferably includes a link which, when selected, allows the user to apply for the proposed consolidation option.

Referring again to Fig. 8, and as discussed above, the user can select a proposed product (step S108) to invoke product processing (step S110) for the selected product.

The operation of information processor 12 in the case where the user indicates a borrowing goal as lowering interest rates or lowering monthly payments as depicted by elements 24a and 24b, respectively, in Fig. 4 is explained with reference to Fig. 14. As discussed above, the user is prompted in step S100 (see Fig. 3) to input certain data. This user input data preferably corresponds to one or more of user objective 104, user credit profile 106 and user personal information 108.

User objective 104 corresponds to the user's selected primary goal as set forth in objective indicator

area 24. User credit profile 106 is comprised of the particular credit data relating to current user credit accounts, for example residential mortgage information, credit cards, secured and unsecured loans, auto loans, home equity loans, lines of credit, and the like. This information is preferably comprised of account identifying indicia, interest rates, monthly payments, total balances and available credit, etc.

User personal information 108 represents the information gathered if the user elects to make a formal registration i.e., user ID and password with system 10. It is contemplated that it is not necessary for the user to provide personal information 108, i.e., the user need not formally register in order to use system 10.

However, in an alternative embodiment, a user can be encouraged to provide personal information 108 for example their name, address, social security number, date of birth and other demographic information, perhaps by offering the user a free copy of the results of a credit check. Registered users information can also be stored in a personal profile allowing the registered user to bypass the data input step on future visits to the site. Registered users should be given the opportunity to update and edit their personal profile. It is also contemplated that in exchange for providing user personal information 108, the provider of system 10 can implement business decision rules which compensate the user in some fashion, for example, by discounting an interest rate, offering a rebate or prize, etc.

Providing user personal information 108 allows information processor 12 to consider additional factors during the business decision rules processing step. For example, obtaining a credit check to determine the user's credit worthiness allows information processor 12 to determine an interest rate and/or product based, in part, on the user's credit worthiness. Similarly providing user personal information 108 also allows the system, through a log-in ID and password mechanism, to identify the user. Logging into system 10 allows the user's input data to be saved, thereby allowing the user to start and stop data entry and product evaluation at any time. In the case where the user is not registered, leaving the website associated with system 10 typically requires that the user begin data entry and analysis from the beginning.

Information processor 12 also gathers service provider product data 110. Service provider product data 110 corresponds to those products which are available for information processor 12 to consider during the decision rules processing step (step S104). Service provider product data 110 includes residential loans such as mortgages, credit cards, automobile loans, home equity loans and lines of credit, etc. Service provider product data 110 can be stored on a database within information processor 12 or can be gathered from product processors 18.

It is preferred that product processor 18 be able to provide information concerning outside products; that is

products that are offered by someone other than the system provider. Outside service provider products can be stored on the database within processor 12 or can be gathered from the Internet as needed. The system  
5 provider can charge a fee to outside providers to be included in the database or gathering process. Links can be provided so that the user can either apply for an outside product on-line or receive further information.

Information processor 12 provides credit summary  
10 output 112 in the form of credit summary display screen 52 to the user, taking into account user objective 104, user credit profile 106 and user profile information 108 (when user profile information is supplied).

In step S104 (Fig. 3), information processor 12  
15 processes user objective 104, user credit profile 106, user personal information 108 and service provider product data 110 using a comprehensive set of predetermined business decision rules to determine those products which meet the user's criteria based on the  
20 service providers products and presents the results in the form of multi-level output 114. An example of multi-level output 114 is discussed above.

Fig. 15 is a block diagram showing the input and output flows with respect to information processor 12 in  
25 the case where the user indicates his objective as obtaining credit, for example, as shown by obtain credit objective indicator 24c in Fig. 4. As shown in Fig. 15, information processor 12 receives user objective 104 and, where provided, user personal information 108 from the



user. Information processor 12 also gathers service provider product data 110. In the case of user objective 104, the user also selects the particular type of credit they wish to obtain, for example, from obtain credit display screen 28 (Fig. 5).

Based on the user's stated objective and the list of products available, information processor 12 provides output 116 to the user via user terminal 14. Output 116 is preferably comprised of particularized information relating to the user's credit objective. For example, referring to Fig. 5, a user who wishes to obtain credit for a vacation will be provided with details relating to how one may finance a vacation and what products offered by the service provider are recommended for vacation financing. It is also contemplated that the user can apply on-line for the particular type of credit they seek.

The difference between multi-level output 114 as shown in Fig. 14 and output 116 as shown in Fig. 15 is that output 116 is not determined based on user credit profile 106. In other words, in the case of output 116, information processor 12 has not considered the user's current credit status but instead, determines a list of potential products based on the type of credit the user wishes to obtain. This aspect of the present invention conveniently allows a user to see what credit options are available prior to engaging in the credit data entry process.

Fig. 16 is a diagram showing a process flow of the present invention from the perspective of information processor 12. As shown in Fig. 16, information processor 12 implements various form portions 118 to create data input display screens 120 based on templates 122. Applications for developing form templates are known.

In order to create data input display screens 120, information processor 120 selects a template 122 upon which a form body, form entry areas, form completion rules, form action and error are imposed from among form portions 118. For example, the form body is preferably comprised of the displayed form text. Form entry areas provide the user with areas in which data are entered. Form completion rules set forth the requirements for how the how form is to be completed, for example, a name and electronic mail address must be provided, but a telephone number is optional, etc. Form action and error define what happens to a properly and improperly completed form, respectively. Data input display screens 120 are presented on user terminal 14 as discussed above.

When the user submits credit data to information processor 12, information processor 12 retrieves a credit summary template from among templates 122, makes all necessary calculations, for example determining average interest rates, total credit balances, and the like, and generates credit summary display screen 124, an example of which is shown as credit summary display screen 52 in Fig. 7.

Information processor 12 applies business rules to the user's data based on available products to derive the multi-level summary and detail displays. For example, information processor 12 implements business rules which are based on the user's geographic state, i.e., state of residence, other constants, current interest rates for available products, whether the user's objectives include a current or desired home loan or home equity line of credit (HE LOC) as well as payfast.

Payfast is a feature of the present invention which provides the user with an analysis of how the user's payment duration will be shortened if the user applies the savings resulting from particular product(s) to pay down the principal of the selected product. For example, a user who has twenty-four months remaining on an outstanding secured loan may be presented with a refinancing opportunity to lower interest rates and therefor monthly payments. By making the same payment amount as the current payment on the refinanced loan, the user may be able to shorten the remaining term to less than twenty-four months.

Business rules 126 are preferably stored in a database associated with information processor 12. Information processor 12 generates level one and two displays 128 as discussed above. Further, information processor 12 compiles pictorial representations 130 to provide a detail view of the products and/or consolidation options available to the user.

The present invention advantageously provides a

comprehensive system by which a user can utilize a web browser to input a modest set of data relating to their current credit situation and indicate a financing objective. The system advantageously accepts this data and, using a set of business decision rules, considers the user's credit data in conjunction with products offered by the service provider so as to provide the user with an optimized credit financing opportunity list presented in the form of a multi-level view of their current credit profile compared with products offered by the service provider which will meet the user's objective, i.e., save the user money by lowering their interest rate or lowering monthly payments, etc. The multi-level display includes a summary view of the available options, and allows the user to obtain detailed information, in the form of graphs, charts, and the like so that the user can determine which proposed option, if any, is beneficial to them. Further, the user can apply on-line for those products for which the user is interested.

It is very important for the user of the system to have a high level of trust and confidence that the options presented are unbiased and represent the most beneficial proposal to meet the stated objectives. In other words, all options presented must meet the user's criteria. User confidence is further enhanced by presenting outside or third party offerings that meet the user's criteria. It is preferable to present the option that is most beneficial in meeting the user's stated

objectives when more than one option satisfies the criteria. Alternatively, a full list of all options meeting the user's objectives can be displayed allowing the user to select between them.

5           The present invention advantageously obviates the need for the user to have custom software on user terminal 14 because information processor 12 provides all necessary forms, Java applets, Active-X control programs and the like to user terminal 14. In other words, the  
10       present system goes beyond mere electronic calculators and routing, aiding the user in a manner which allows the user to make an informed decision as to which financing products meets their needs. This can be done in the comfort of the user's own home, place of business, etc.,  
15       such that the user need not personally visit the service provider location.

          Although the present invention has been described in the preferred embodiment as relating to financial products, the system and method described is portable  
20       allowing the method to be used in other applications. More generally, the present invention is an expert decision-making platform that utilizes an electronic network such as the Internet to present a user with a list of optimized choices selected on the basis of  
25       selectable criteria.

          Referring to Fig. 17, a user at an input terminal, inputs a topic requiring optimization (step 200). The input data is sent to a knowledge bank 1000 (step 210). Knowledge banks are sophisticated data banks which

perform artificial intelligence functions as is known in the art. Knowledge bank 1000 is preferably connected to outside resources 1010 through an electronic network (i.e. Internet). Outside resources 1010 can include other knowledge banks, web pages, business providers, etc. which help knowledge bank 1000 keep current and broad in scope. Knowledge bank 1000 sends the results of the queries based on user input (step 200) to a decision rules processor 1030 (step 220). The output from step 220 is displayed to the user in step 230. In step 240, the user may choose to take further action such as visit a recommended website or make a purchase (step 250) or end the process. For example, a user interested in optimizing her insurance coverage, could select from among objectives like maximum coverage for a given premium or future cash value etc. After inputting the appropriate personal data, the system can present the user with options meeting the stated objective. Links can be provided allowing the user to apply online for a selected product.

Although the present invention has been described in relation to particular embodiments thereof, many other variations and modifications and other uses will become apparent to those skilled in the art. It is preferred, therefore, that the present invention be limited not by the specific disclosure herein, but only by the appended claims.